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The case against Soviet scientific visitors in weapons-related fields.

UNFAIR EXCHANGE

Amos K. Wylie

A recent article in *Aviation Week and Space Technology*, a McGraw-Hill publication,[1] reads in part as follows:

> The United States is launching a number of optical maser lethal-weapons programs which may lead to entire families of revolutionary new weapons, possibly including a fast, "clean," non-nuclear defense against ballistic missiles, by as early as the middle of this decade. . . .
>
> The optical maser radiation weapon will have far broader implications than ballistic missile defense alone, although the latter is the prime need. In space, beyond the attenuating and scattering effects of the earth's atmosphere, power requirements might be sharply reduced, and with device refinements, weapon devices made small enough to be carried on inspector satellites or larger space vehicles as anti-satellite or spacecraft defense weapons.
>
> As an anti-personnel or anti-tank weapon the device would be useful, but, some industry sources speculate, is roughly like shooting pheasants with an elephant gun. Nevertheless, these applications are being investigated by Army agencies such as Frankfort Arsenal. Setting up a defensive curtain through which neither man nor machine could pass may also be a distinct radiation weapon possibility.

A similar article entitled "'Light Ray'—Fantastic Weapon of the Future" in *U.S. News and World Report*[2] says of lasers:

> Authorities see the US in a race with Russia for a radical new family of important weapons. It is a race that could have far-reaching effects in the years ahead.

These articles provide a valuable background for consideration of the recent visit to the United States of Yuriy Mikhailovich Popov, a senior scientist at the Institute of Physics *imeni* P. N. Lebedev, under Article 3 of the Exchange Agreement between the National Academy of Science and the Academy of

[1] "U.S. Begins Laser Weapons Programs," by Barry Miller. March 26, 1961, pp. 41, 43, 45.

[2] April 2, 1962, pp. 47–50.

Sciences of the USSR. He was scheduled during his tour to conduct research at Harvard University, visit MIT, Columbia, California Institute of Technology, and the University of California, and attend meetings of the American Physical Society in New York.

Two revealing scientific comments on Popov and his visit merit the particular attention of the intelligence community. The observations of a Professor of Electrical Engineering at a major U.S. university, a specialist on lasers, concerning Popov's week-long visit to his laboratory in February 1962 are as follows:

> Yuriy Popov is a "maser-laser man," all right. This is his own description of himself . . .
>
> Popov said the Institute [Lebedev] has a ruby maser. This would mean they have at least one. They are extremely interested in its properties for burning up materials—for destruction, Popov said, adding that he was fascinated with a maser he had seen in the US which could burn through six razor blades. His ruby maser apparently cannot do this.
>
> With respect to the use of lasers for destruction, it is my opinion that within five years it will be possible to have a laser ray capable of destroying an ICBM in flight. Of course, I did not discuss this opinion with Popov, but I am sure a man of his technical sophistication has this possibility in full view . . .
>
> I conclude that Popov is in the US to learn as much as possible about our laser work, in particular . . .
>
> Popov is 32–33 years old, and seems to have the sort of drive I would associate with an ambitious guy. His English is very good. He has a large vocabulary. He can even pick up subtle meanings . . .

The other comment was offered by a physicist, a member of the technical staff of a large U.S. research organization, after meeting and having dinner with Popov.

> In the past I have met and conversed with many Soviet scientists but never have I met one so corrupt and Communist indoctrinated as Dr. Popov . . .
>
> Dr. Popov is a shrewd and intelligent man. Even though he was relaxed, he was difficult to draw out and was cautious about making any definite statements. He was also very cynical in attitude, saying in essence, "We know more about you than you do about us. You can't learn anything about our work. On the

other hand all we have to do is come to your country and buy all the technical information we need." (Here he was referring to the open sale of technical publications.) He was probably instructed to absorb as much information as possible before returning to the USSR because he read continuously while here all the latest publications on masers and lasers and any other material akin to this field . . .

During our conversation, Dr. Popov said that he wanted to obtain [purchase] some US manufactured ruby crystals. I asked him why. He said that those of the US were superior to those made in the USSR. He said he was also interested in purchasing a US manufactured laser unit. He then asked me about a new device called the Golley Cell, used for infrared radiation. Evidently the Soviets neither have such a device nor the literature thereof and he wanted to learn something about it. However, rather than ask me outright how the cell was constructed he asked what the parameters of the cell were. I told him I didn't know. . . .

The scientific exchange program is a fine idea. But in my opinion, the Soviets are probably gaining more from it than we are. In the case of Dr. Popov, he tried to learn everything he could and from what I could ascertain, stuck his nose into everything. He visited some of the centers of our maser and laser research and will probably take some valuable information back to the USSR. His knowledge of up-to-date US maser and laser data was rather embarrassing. As I said, he read everything that he could on the subject and in some instances was better informed on the subject than I.

Dr. Popov had nothing but praise for the Communist regime. To him, Stalin and Khrushchev are both great men . . .

Was Yuriy Mikhailovich Popov's visit to the United States in the national interest? To ask the question is to answer it. He was an agent of our principal adversary assigned to collect all the information he could on our work in a field basic to revolutionary new weapons. He apparently met with considerable success in his mission, and he is now back in Moscow using the knowledge he gained in the United States to help the USSR win the race to develop the laser into an effective military instrument. Moreover, with the knowledge he gained in the United States he is in a position to help the Soviet espionage effort targeted on any future classified developments in U.S. research on the laser.

Is this an isolated case of a Soviet scientific visit injurious to the United States? Considering the history of the USSR and the Communist philosophy, it is clear that the Soviet

Party and Government would never permit a Soviet scientist to come to the United States unless it thought that the visit would promote the achievement of ultimate Soviet objectives. Admittedly one of these objectives is the elimination of our political and social system. It therefore follows that each visiting Soviet scientist must be assumed to be an agent, subject to the continuing control of the Soviet state and the CPSU, who has been carefully briefed to obtain while in the United States scientific intelligence of maximum value to the USSR. What happens if the agent should seem not sufficiently amenable to Party discipline while in the United States is illustrated by the sudden departure on 23 October 1961 of the Soviet chemist Oleg Nikolaevich Pirogov from this country. The circumstances of his abrupt recall, ostensibly because of a family emergency, have been said to center on the fact that Pirogov's most outstanding trait was his utter disdain for the Soviet political officials at the office of the USSR Mission to the United Nations, 680 Park Avenue, New York City.

Soviet scientists in the United States are not under U.S. police surveillance. The great majority of them can speak English adequately and read it with ease. They are in most cases seeking information in fields in which we are ahead of the Soviets. And we have no law prohibiting our scientists from imparting knowledge and techniques to their scientific colleagues from the USSR unless they have been formally classified by some competent agency of the government.

Many Soviet "students" who come to the United States under so-called student exchanges are not undergraduates, but mature graduate students or teachers capable of learning the latest U.S. advances in research and development in their respective fields. Oleg V. Roman, for example, who is a teacher in the field of powder metallurgy at the University of Minsk, where he has 30 or 40 people working under him in his laboratory, has recently, under the student exchange program, conducted research in powder metallurgy at the Rensselaer Polytechnic Institute, attended the annual meeting of the Metal-

lurgical Society of the American Institute of Mining, Metallurgical, and Petroleum Engineers in New York City, attended a U.S. powder metallurgy conference in Philadelphia, and taken part in a meeting arranged by the Metal Powder Industries Federation between U.S. powder metallurgists and the Soviet powder metallurgists I. M. Fedorchenko and Yu. M. Semenov. The report that he writes when he returns to the USSR, together with his debriefing by scientific intelligence officers vested with the full coercive power of the Soviet state, should provide a substantial contribution to Soviet scientific intelligence in the field of powder metallurgy. To assume otherwise is to be unrealistic and to ignore dangerously the existence of the cold war.

These considerations create a presumption that the great majority of visits by Soviet scientists to U.S. research laboratories, universities, and technical institutes are contrary to the national interest. Is this damage to the national interest exceeded by the benefit derived from information U.S. scientists acquire on exchange visits to the USSR? Here we have the converse considerations.

U.S. scientists visiting the USSR are not under government direction and control. They can be selected only from among volunteers. Many of them feel their primary mission to be the advancement of science for the benefit of all mankind. The majority can neither speak nor read Russian. The majority are knowledgeable in fields in which Soviet science lags behind the U.S. Their visits are made under rigid Soviet controls; they see only those installations and talk to only those scientists designated by the Soviet state.

Moreover, Soviet scientists are subject to trial by military courts, even though they are civilians, and to punishment for military treason if they disclose state secrets,[3] a crime punishable ordinarily by execution and confiscation of all property. One of the most notorious provisions of Soviet criminal law is the doctrine of analogy, which permits a person to be punished for a socially dangerous act not directly prohibited

[3] *Soviet Military Law and Administration*, by Harold J. Berman and Miroslav Kerner (Harvard, 1955), p. 73.

by law but analogous to a prohibited act.[4] Under the law of June 9, 1947, servicemen who disclose, whether through negligence or by intent, military information constituting a "specially-to-be-guarded state secret" are punishable by imprisonment in a corrective labor camp from ten to twenty years. In an accompanying decree such protected military information was defined to include practically all conceivable types of information bearing not only upon military plans and operations but also upon the physical and economic reserves of the State (including "human reserves subject to mobilization"), war industry, and technical means of defense.[5]

Finally, some U.S. scientists are reluctant to cooperate with U.S. intelligence officers seeking foreign scientific intelligence. A recently published letter[6] by Patrick D. Wall of the Department of Biology at the Massachusetts Institute of Technology reads in part as follows:

> On 24 January I was visited by a representative of the Central Intelligence Agency. He asked me for information about the direction being taken by certain foreign scientists in the field of neurophysiology. I felt I should not give him this information, I discussed my reasons with him, and he left. . . . if a colleague had asked me the CIA questions I would have replied without hesitation . . .

It is proper that representatives of U.S. agencies seeking foreign intelligence in peacetime should not be vested with coercive powers, but does anyone in touch with reality suppose that their counterparts in the USSR do not have at their call the full coercive power of the state?

These opposing sets of conditions lead to a strong presumption that any exchange of visits by U.S. and Soviet scientists, at least by those whose fields are related to the development of new military weapons, will result in a net intelligence gain for the USSR. It would therefore seem that those who advocate continuing an exchange of visits by scientists specializing in lasers, automatic control, acoustics, solid state physics, nuclear physics, computers, and other fields related

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[4] *Ibid.*, pp. 69, 70.

[5] *Ibid.*, pp. 83, 84.

[6] "Letters—Scientists and the CIA," *Science*, 13 April 62, p. 173.

to new weapons should come forward with specific, detailed, reliable evidence to prove that the majority of such exchanges have in the past brought a net intelligence gain to the United States. No evaluation I have seen reaching this conclusion about a particular exchange has contained such supporting evidence.

The argument is advanced that Soviet scientists learn little by visiting the United States that they could not learn from the published scientific literature. But each visit by a Soviet scientist puts the Soviets in a better position to exploit the literature. Moreover, it is obvious a Soviet scientist like Y. M. Popov will be always probing the grey area where unclassified scientific data borders on classified information and will continually try to acquire classified information or leads as to where it can be acquired. It is his duty as a good Communist to do so.

Another argument which I believe is used by proponents of these exchanges is that if Soviet scientists are permitted to come to the United States and visit U.S. universities and research institutes they will go back to the USSR with a true picture of the United States which they will spread among their acquaintances, and the result will be that the image of the United States as a degenerate, aggressive, selfish society projected by the Communist Party will be replaced by the truth. The fallacy in this argument is that it ignores the careful screening process that must take place before a Soviet scientist is permitted to come here. Surely the disciplined and purposeful CPSU is not going to permit a scientist to come to the United States if it can foresee that he might act in a socially dangerous manner on his return. Furthermore, if it is desired to convey a true picture of the United States to the people of the USSR, cannot this objective be accomplished through visits by Soviet authors, poets, singers, or athletes, who will not carry back also items of scientific intelligence to build up Soviet military might?

I would be happy to read in this journal an answering article in support of the proposition that exchanges of visits by U.S. and Soviet scientists in fields related to the development of new weapons are in the U.S. national interest.[1]

[1] Such an article is under consideration for a future issue.